

AMENDMENTS TO THE CLAIMS:

Please amend the claims as follows:

1. (Canceled)

2. (Currently Amended) ~~The pattern identification apparatus according to claim 1~~ A pattern identification apparatus for identifying a predetermined pattern contained in an image, said apparatus comprising:

a storage section in which data related to said predetermined pattern is stored;

a first collation section for making comparison and collation between data related to an image in a first area greater than an area of said predetermined pattern in said image and said data related to said predetermined pattern;

a cutting section for cutting out a second area smaller than said first area from said first area based on the result of comparison carried out by said first collation section;

a second collation section for making comparison and collation between data related to an image in said second area and said data related to said predetermined pattern; and

an identification section for identifying said predetermined pattern contained in said image based on the result of comparison carried out by said second collation section,

wherein said first collation section carries out comparison and collation while shifting said predetermined pattern relative to said image in said first area one unit area by one unit area which constitutes data related to said image, thereby to calculate a difference level between said image in said first area and said predetermined pattern,

and said cutting section cuts out said second area based on an amount of shift of said predetermined pattern relative to said image in said first area at the time when said difference level meets a predetermined requirement.

3. (Currently Amended) ~~The pattern identification apparatus according to claim 1~~ A pattern identification apparatus for identifying a predetermined pattern contained in an image, said apparatus comprising:

a storage section in which data related to said predetermined pattern is stored;

a first collation section for making comparison and collation between data related to an image in a first area greater than an area of said predetermined pattern in said image and said data related to said predetermined pattern;

a cutting section for cutting out a second area smaller than said first area from said first area based on the result of comparison carried out by said first collation section;

a second collation section for making comparison and collation between data related to an image in said second area and said data related to said predetermined pattern; and

an identification section for identifying said predetermined pattern contained in said image based on the result of comparison carried out by said second collation section,

wherein said data related to said predetermined pattern stored in said storage section comprises characteristic data representative of horizontal and vertical characteristics in said predetermined pattern, said first collation section comprises a first conversion section for converting image data in said first area into characteristic data

representative of horizontal and vertical characteristics, and compares and collates said characteristic data converted by said first conversion section with said characteristic data of said predetermined pattern, and said second collation section comprises a second conversion section for converting image data in said second area into characteristic data representative of horizontal and vertical characteristics, and compares and collates said characteristic data converted by said second conversion section with said characteristic data of said predetermined pattern.

4. (Original) The pattern identification apparatus according to claim 3, wherein said characteristic data obtained by said first and second conversion sections are normalized.

5. (Currently Amended) The pattern identification apparatus according to claim [[1]] 2, wherein said storage section stores a plurality of kinds of different patterns as patterns to be identified.

6. (Original) The pattern identification apparatus according to claim 5, wherein said storage section stores data related to an area of each of said plurality of kinds of patterns contained in said image, and said first area is determined based on data related to said areas stored in said storage section.

7. (Canceled)

8. (Currently Amended) ~~The pattern identification apparatus according to claim 7,~~ A pattern identification apparatus for identifying a predetermined pattern contained in an image, said apparatus comprising:

a storage section in which data related to said predetermined pattern is stored;

a first cutting section for cutting out a first area greater than said predetermined

pattern area from said image;

a first collation section for making comparison and collation between data related to an image in said first area and said data related to said predetermined pattern;

a second cutting section for cutting out a second area smaller than said first area from said first area based on the result of comparison carried out by said first collation section;

a second collation section for making comparison and collation between data related to an image in said second area and said data related to said predetermined pattern; and

an identification section for identifying said predetermined pattern contained in said image based on the result of comparison carried out by said second collation section,

wherein said first collation section carries out comparison and collation while shifting said predetermined pattern relative to said image in said first area one unit area by one unit area which constitutes data related to said image, thereby to calculate a difference level between said image in said first area and said predetermined pattern, and said second cutting section cuts out said second area based on an amount of shift of said predetermined pattern relative to said image in said first area at the time when said difference level meets a predetermined requirement.

9. (Currently Amended) ~~The pattern identification apparatus according to claim 7,~~ A pattern identification apparatus for identifying a predetermined pattern contained in an image, said apparatus comprising:

a storage section in which data related to said predetermined pattern is stored;

a first cutting section for cutting out a first area greater than said predetermined pattern area from said image;

a first collation section for making comparison and collation between data related to an image in said first area and said data related to said predetermined pattern;

a second cutting section for cutting out a second area smaller than said first area from said first area based on the result of comparison carried out by said first collation section;

a second collation section for making comparison and collation between data related to an image in said second area and said data related to said predetermined pattern; and

an identification section for identifying said predetermined pattern contained in said image based on the result of comparison carried out by said second collation section,

wherein said data related to said predetermined pattern stored in said storage section comprises characteristic data representative of horizontal and vertical characteristics in said predetermined pattern, said first collation section comprises a first conversion section for converting image data in said first area into characteristic data representative of horizontal and vertical characteristics, and compares and collates said characteristic data converted by said first conversion section with said characteristic data of said predetermined pattern, and said second collation section comprises a second conversion section for converting image data in said second area into characteristic data representative of horizontal and vertical characteristics, and compares and collates said characteristic data converted by said second conversion

section with said characteristic data of said predetermined pattern.

10. (Original) The pattern identification apparatus according to claim 9, wherein said characteristic data obtained by said first and second conversion sections are normalized.

11. (Currently Amended) The pattern identification apparatus according to claim [[7]] 8, wherein said storage section stores a plurality of kinds of different patterns as patterns to be identified.

12. (Original) The pattern identification apparatus according to claim 11, wherein said storage section stores data related to an area of each of said plurality of kinds of patterns contained in said image, and said first area is determined based on data related to said areas stored in said storage section.

13-20. (Canceled).

21. (New) The pattern identification apparatus according to claim 3, wherein said storage section stores a plurality of kinds of different patterns as patterns to be identified.

22. (New) The pattern identification apparatus according to claim 21, wherein said storage section stores data related to an area of each of said plurality of kinds of patterns contained in said image, and said first area is determined based on data related to said areas stored in said storage section.

23. (New) The pattern identification apparatus according to claim 9, wherein said storage section stores a plurality of kinds of different patterns as patterns to be identified.

24. (New) The pattern identification apparatus according to claim 23, wherein

said storage section stores data related to an area of each of said plurality of kinds of patterns contained in said image, and said first area is determined based on data related to said areas stored in said storage section.

25. (New) A pattern identification method for identifying a predetermined pattern contained in an image, said method comprising:

storing data related to said predetermined pattern in a storage section;

comparing and collating, by a first collation section, between data related to an image in a first area greater than an area of said predetermined pattern in said image and said data related to said predetermined pattern;

cutting out a second area smaller than said first area from said first area based on the result of comparison carried out by said first collation section;

comparing and collating, by a second collation section, between data related to an image in said second area and said data related to said predetermined pattern;

identifying said predetermined pattern contained in said image based on the result of comparison carried out by said second collation section;

comparing and collating, by said first collation section, while shifting said predetermined pattern relative to said image in said first area one unit area by one unit area which constitutes data related to said image, thereby to calculate a difference level between said image in said first area and said predetermined pattern; and

cutting out said second area based on an amount of shift of said predetermined pattern relative to said image in said first area at the time when said difference level meets a predetermined requirement.

26. (New) A pattern identification method for identifying a predetermined

pattern contained in an image, said method comprising:

storing data related to said predetermined pattern in a storage section;

comparing and collating, by a first collation section, between data related to an image in a first area greater than an area of said predetermined pattern in said image and said data related to said predetermined pattern;

cutting out a second area smaller than said first area from said first area based on the result of comparison carried out by said first collation section;

comparing and collating, by a second collation section, between data related to an image in said second area and said data related to said predetermined pattern;

identifying said predetermined pattern contained in said image based on the result of comparison carried out by said second collation section;

wherein said data related to said predetermined pattern stored in said storage section comprises characteristic data representative of horizontal and vertical characteristics in said predetermined pattern, said first collation section comprises a first conversion section for converting image data in said first area into characteristic data representative of horizontal and vertical characteristics, and compares and collates said characteristic data converted by said first conversion section with said characteristic data of said predetermined pattern, and said second collation section comprises a second conversion section for converting image data in said second area into characteristic data representative of horizontal and vertical characteristics, and compares and collates said characteristic data converted by said second conversion section with said characteristic data of said predetermined pattern.